

INFORMATION REPORT

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- a) The Optical Department, headed until the fall of 1952 by Dr. Josef Fassbender. After the latter's defection to West Germany, Dr. Wilhelm Muscheid was appointed acting head of the Department. Muscheid is now doing research on the influence of oxygen upon the conductivity of cadmium-selenide crystals. Together with Dipl. Physicist Wilhelm Muller, Muscheid specifically does research on the relations between temperature and oxygen contents in CdS crystals and the photo current (Hall effect). Another member of the Optical Department, Fraulein Ingrid Kasper, formerly with the Oberspreewerk, is engaged in research on the distribution of potential in the CdS crystal. Dr. Herhard Herapin, who has carried out and is still conducting research on the growth and decay of the photo current in CdS crystals, was fired by Neopatria in December 1952 because of political unreliability; Herapin defected to West Germany.
- b) The Electronics Department, headed by Dr. (fnu) Eckert,¹ who was formerly with the Oberspreewerk and joined the Institute about nine months ago. Eckert is doing experimental work with television tubes. Dipl. Physicist Gerhard Schubert carries out research on the distribution of the potential of CdS crystals subjected to bombardment with electrons emanating from a glow cathode and directed upon the crystals with a focusing installation. This is done in high vacuum. The high vacuum equipment comes from the Leybold firm in Cologne. Physicist Gerhard Mueller is engaged in research on the decay of luminescence of various substances. The decay time of luminescence is studied by means of a multiplier, an amplifier and an oscillograph. It is expected that the results of Mueller's work can be put to use to develop television screens with a very short decay time. Physicist Heinz Dietrich, also formerly with the Oberspreewerk, is growing silicon crystals. The crystals so far grown have the maximum size of a pinhead. No research with silicon crystals has yet been done. It is, however, hoped that transistor effects similar to those of germanium crystals will be found.
- c) The Chemical Department. Head of this department is Dr. Otto Neunhoeffer, professor for Theoretical Organic Chemistry at Humboldt University and acting head of its Organic Chemical Institute following the defection to the United States of its former head, Professor Christian Grundmann. Neunhoeffer's function at the Institute is mainly advisory; he is not engaged in active research. Chemical analyst Dr. Rudolf Schluter is doing research on methods to indicate and measure such impurities in CdS crystals and other solids as are necessary to generate photo current effects. Dipl. Chemist Dietrich Rosahl is investigating the dependency of the fluorescence power of organic substances from the composition of the crystals. Dr. (fnu) Ebert and Christl Ede Holland-Well are making CdS crystals. Holland-Well makes them from sulphur and cadmium in vaporized form according to the procedure initiated by Friedrichs and later adopted and developed by Fassbender. The result is CdS crystals in the form of extremely thin foils. Ebert makes crystals from molten cadmium sulphide. As a result, crystals of spherical shape about the size of a pea were obtained for the first time in November 1952.
- d) The Department for Structure Research is headed by Dr. Hellmut Simon. He is engaged in experimental work on the use of CdS crystals as X-ray dosimeters. His so far unsuccessful efforts aim at the production of CdS crystals with such stable qualities that the same photo current is always generated by bombardment with one roentgen per second. Dipl. Physicist Gerhard Eichhoff is doing research on the energy bands of the CdS crystal when exposed to ultra soft X-Rays of about 10 angstrom. Research initiated by Dipl. Physicist Hans Thiel on the exposure of CdS crystals to X-rays and infra-red rays (killer effect) was suspended because Thiel had to take a long-term hospital cure for tuberculosis.

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e) A new department is now being established. This department will be engaged in theoretical research on the physics of solids. Dr. Gerhard Hoehler, Moeglich's chief assistant in the Institute for Theoretical Physics, has been appointed its head.

4. The entire work of the Institute is very much dependent upon the mounting of the CdS crystals made in the Chemical Department of the Institute into CdS cells. Since Fassbender defected to West Germany, chief laboratory technician (fnu) Peschke is the only person in the Institute who can properly do this task.

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